The Impact of FinTech Financing Announcement Events on the Stock Prices of Traditional Banks

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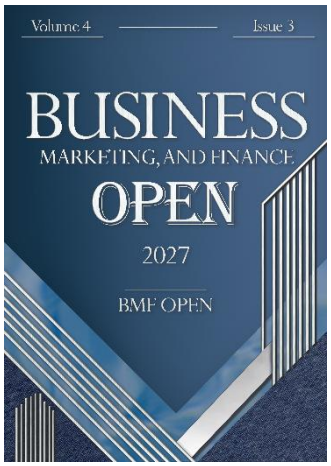

Citation: Haji Bagheri, M., Dadashi Nasab, M., Hasan Khani, M. E., & Nazari, L. (2027). The Impact of FinTech Financing Announcement Events on the Stock Prices of Traditional Banks. *Business, Marketing, and Finance Open*, 4(3), 1-18.

Received: 10 March 2026
Revised: 03 June 2026
Accepted: 10 June 2026
Initial Publication: 23 June 2026
Final Publication: 01 May 2027

Abstract: The present study aimed to investigate the impact of FinTech financing announcement events on the stock prices of traditional Iranian banks and to determine whether different FinTech business categories function as substitutes for or complements to conventional banking institutions. This study employed a quantitative event-study design to evaluate the stock market reaction of traditional Iranian banks to FinTech financing announcements occurring between August 2016 and July 2025. The sample consisted of 174 completed financing events involving Iranian FinTech firms and 20 traditional banks listed on the Tehran Stock Exchange and Iran Fara Bourse. Daily stock price data were collected for a 130-day estimation window prior to each event. Abnormal returns were estimated using the market model and ordinary least squares regression. Cumulative average abnormal returns (CAARs) were calculated across multiple event windows surrounding the announcement date. To assess statistical significance and robustness, both the parametric Student's t-test and the nonparametric generalized sign test were applied. In addition to the aggregate FinTech sample, separate analyses were conducted for Digital Lending, Digital Capital Raising, Digital Payments, Digital Banks, WealthTech, and Alternative Credit Analytics categories. The aggregate analysis revealed no statistically robust evidence that FinTech financing announcements significantly affected the stock prices of traditional banks. Although the Student's t-test indicated significant negative CAARs for the [-3, +3] (-0.386%, $p < .05$) and [-5, +5] (-0.447%, $p < .10$) event windows, normality diagnostics showed distributional violations, and the generalized sign test failed to confirm these effects. Category-level analyses revealed significant heterogeneity. Digital Capital Raising announcements generated positive abnormal performance, with significant CAARs observed for the [0, +1] (0.405%, $p < .05$) and [0, +3] (0.542%, $p < .10$) windows, indicating a complementary relationship with traditional banks. Digital Lending announcements produced a significant negative CAAR for the [-1, +1] window (-0.254%, $p < .10$), suggesting a substitution effect. Digital Payments announcements generated a significant positive event-day CAAR (0.166%, $p < .05$), supporting a complementary interpretation. The findings indicate that FinTech financing announcements do not exert a uniform influence on traditional bank stock prices. While the aggregate effect of FinTech financing activity is statistically insignificant, important differences emerge across FinTech sectors.

Keywords: FinTech Financing; Traditional Banks; Event Study; Stock Market Reaction; Digital Lending

1. Introduction

The rapid expansion of financial technology has transformed the structure, conduct, and competitive dynamics of financial markets. FinTech has moved beyond being a marginal technological innovation and has become a

central force reshaping banking, payment systems, lending, investment services, risk management, and customer interaction. This transformation has intensified questions about whether FinTech firms should be understood primarily as substitutes for traditional banks, complements to existing financial institutions, or hybrid actors that simultaneously compete with and support banks depending on their activity domain. The issue is particularly important because traditional banks remain core institutions in financial intermediation, liquidity creation, credit allocation, and systemic stability, while FinTech firms increasingly challenge conventional business models through digital platforms, algorithmic decision-making, alternative credit assessment, blockchain-enabled services, digital payments, and low-cost customer acquisition strategies [1, 2].

The structural transformation generated by FinTech is not uniform across financial systems. In some contexts, FinTech innovation has accelerated financial inclusion, expanded credit access, improved payment efficiency, and reduced transaction costs. In other contexts, it has introduced new forms of operational, prudential, technological, and market risk. Evidence from China, for example, shows that the rise of FinTech, cryptocurrencies, and central bank digital currency initiatives has contributed to broad financial structural transformation and has altered the interaction between conventional banking institutions and digital financial actors [2, 3]. Similarly, global evidence indicates that the relationship between FinTech development and bank performance differs across economies, institutional structures, and levels of economic development, suggesting that the impact of FinTech on banks cannot be reduced to a single universal pattern [4].

A major reason for this complexity is that FinTech contains multiple subsectors with different implications for banks. Digital lending platforms may compete directly with banks by offering credit to individuals and firms through alternative data and automated scoring models. Payment FinTechs may either compete with banks in transaction services or complement them by providing technological infrastructure. Digital capital-raising platforms may expand investment channels and create partnership opportunities with banks. WealthTech, RegTech, blockchain-based financial services, and supply-chain finance platforms may also produce different effects depending on whether they replace banking functions or enhance bank operations. Studies on peer-to-peer lending and digital credit markets show that FinTech lenders can address unmet credit demand, especially among small firms and underserved borrowers, but may also introduce credit-risk challenges when digital platforms expand faster than regulatory and monitoring mechanisms [5, 6].

The competitive pressure imposed by FinTech is especially visible in lending markets. Traditional banks have historically dominated credit intermediation because of their access to deposits, regulatory legitimacy, branch networks, and borrower information. However, FinTech lenders challenge these advantages by using nontraditional data, faster loan processing, platform-based distribution, and algorithmic underwriting. Research on the financial and prudential performance of Chinese banks and FinTech lenders suggests that digitalization changes not only credit delivery but also risk exposure and prudential performance [6]. Moreover, studies of P2P lending emphasize that credit risk remains a central concern, because the technological advantages of digital lending do not eliminate borrower default risk and may even shift risk assessment into less transparent algorithmic environments [5]. Therefore, financing announcements involving digital lending firms may be interpreted by investors as signals of intensified competition for traditional banks.

At the same time, FinTech can create complementary value for banks. Traditional banks increasingly acquire, partner with, or invest in FinTech firms to access digital capabilities, improve operational efficiency, modernize customer services, and strengthen technological competitiveness. Evidence on mergers and acquisitions involving FinTech firms indicates that such transactions can benefit traditional banks under specific strategic and

organizational conditions, particularly when the acquired FinTech capabilities can be integrated into bank business models [7]. More recent evidence on FinTech merger and acquisition activity also suggests that FinTech-related corporate actions may alter firms' financial statements and performance channels, indicating that market participants may view FinTech transactions as value-relevant information [8]. Thus, market reactions to FinTech financing events may depend on whether investors perceive the financed FinTech firm as a future competitor, partner, acquisition target, infrastructure provider, or innovation signal.

The COVID-19 period further accelerated the digitalization of banking and FinTech adoption. The pandemic disrupted traditional branch-based service delivery and increased reliance on digital channels, remote transactions, platform-based financing, and automated financial tools. Studies of banking sector performance during the COVID-19 crisis show that banks faced significant pressure from macroeconomic uncertainty, loan moratoria, liquidity concerns, and operational disruption [9]. At the same time, policy responses and market reactions during the pandemic revealed important differences between bank stocks and FinTech stocks, suggesting that investors distinguished between traditional financial institutions and digital financial firms during crisis periods [10]. In this context, FinTech became not only a technological innovation but also a crisis-response mechanism, enabling digital payments, online lending, blockchain-supported supply-chain finance, and remote financial access [11, 12].

The stock market provides an appropriate setting for examining how investors interpret FinTech-related information. According to market-based reasoning, new information should be incorporated into stock prices when investors believe that the information affects expected future cash flows, risk, competitiveness, or strategic positioning. Event study methodology has therefore become a widely used approach for measuring the short-term valuation effect of announcements. Prior research on bank loan announcements demonstrates that financial announcements can affect stock liquidity and market valuation because they transmit information about firm quality, financing capacity, and future prospects [13]. Similarly, research on loan moratorium announcements shows that banking-related policy events can generate measurable stock market reactions, reinforcing the relevance of event study designs in banking and financial research [14]. In the context of this study, FinTech financing announcements may function as information events that shape investor expectations about the future relationship between FinTech companies and traditional banks.

However, the expected direction of the stock market reaction is theoretically ambiguous. If investors perceive FinTech firms as disruptive competitors, financing announcements may reduce traditional bank stock prices because newly funded FinTech firms may capture market share, compress margins, attract younger customers, and weaken banks' control over payment, lending, and investment channels. This substitution effect is likely to be stronger when FinTech firms operate in domains close to core banking activities, such as digital lending, digital banking, and alternative credit analytics. Conversely, if investors perceive FinTech firms as complementary partners or infrastructure providers, financing announcements may increase bank stock prices because FinTech growth can improve banking efficiency, expand service delivery, reduce operating costs, and create opportunities for strategic cooperation. Such complementarity may be more likely in digital payments, capital-raising platforms, blockchain-enabled supply-chain finance, and technology-support services [7, 11].

The risk dimension further complicates this relationship. FinTech can reduce certain inefficiencies but also create new financial risks, particularly for systemically important commercial banks. Evidence from China suggests an inverted U-shaped relationship between FinTech and financial risks among systemically important commercial banks, implying that moderate FinTech development may improve efficiency, whereas excessive or poorly managed FinTech exposure may increase risk [15]. This finding is important because market participants may not

respond to FinTech announcements only through a competition lens; they may also consider systemic risk, regulatory uncertainty, cybersecurity exposure, operational resilience, and reputational risk. The Wirecard scandal, for instance, demonstrates that digital finance firms can generate severe governance, transparency, and accounting concerns when rapid technological growth is not accompanied by effective oversight [16].

Broader financial instability also shapes how FinTech information is interpreted. Contemporary financial systems face challenges related to inflationary pressure, monetary tightening, geopolitical shocks, debt sustainability, technological disruption, and post-pandemic adjustment. These challenges can amplify investor sensitivity to information about financial innovation and banking-sector vulnerability [17, 18]. In volatile environments, disruptive technology may affect banking performance differently across market regimes, and the valuation effect of technological change may depend on whether markets are operating under stable or high-volatility conditions [19]. Therefore, the impact of FinTech financing announcements on bank stock prices must be evaluated empirically rather than assumed theoretically.

Corporate finance research also suggests that financing-related announcements may contain information beyond the immediate transaction. Bank loans, insider trading around lending activity, and managerial incentives can transmit signals about firm prospects, information asymmetry, and governance quality [13, 20]. By analogy, FinTech financing announcements may signal investor confidence in a FinTech firm's business model, scalability, technological capacity, and future competitive position. If the funded FinTech operates in a domain that overlaps with traditional banking, such a signal may negatively affect bank valuations. If the funded FinTech offers infrastructure or partnership potential, the same signal may positively affect bank valuations. Thus, the market reaction to FinTech financing news is likely to be category-specific.

Recent evidence on FinTech-related market performance further supports the need for event-based analysis. Studies of FinTech acquisitions in the United States and Europe during and after COVID-19 suggest that market reactions to FinTech transactions depend on institutional setting, crisis conditions, and the strategic characteristics of the acquiring firms [21]. This indicates that FinTech-related corporate events are value-relevant and that their implications may vary between developed and emerging markets. Yet, much of the existing empirical literature focuses on China, the United States, Europe, India, Vietnam, and other major or rapidly digitizing financial markets, leaving less evidence on markets such as Iran, where banking structures, regulatory conditions, capital market dynamics, and FinTech development pathways may differ substantially [3, 4, 12].

The Iranian context is particularly important because traditional banks play a central role in financing economic activity, while FinTech firms have expanded in areas such as payments, lending, digital platforms, and financial service infrastructure. The interaction between these two sectors may influence financial innovation, banking competitiveness, investor expectations, and the future structure of financial intermediation. Yet, the empirical question remains unresolved: do investors view Iranian FinTech financing events as threats to traditional banks, as signals of technological complementarity, or as events with no meaningful effect on bank valuations? Answering this question requires a market-based empirical design capable of capturing short-term abnormal stock returns around clearly defined financing announcements.

Accordingly, the present study contributes to the literature in three ways. First, it applies an event study framework to examine the stock price reaction of traditional Iranian banks to FinTech financing announcements. Second, it distinguishes between the aggregate FinTech effect and category-specific effects, thereby addressing the heterogeneity of FinTech activities. Third, it evaluates whether the relationship between FinTech firms and traditional banks is better characterized as substitution, complementarity, or neutrality in the Iranian market. By

doing so, the study provides evidence relevant to investors, bank managers, FinTech entrepreneurs, regulators, and researchers interested in the evolving structure of financial markets.

The aim of this study is to investigate the impact of FinTech financing announcement events on the stock prices of traditional Iranian banks and to determine whether different FinTech activity categories create substitution, complementarity, or no significant market effect for the traditional banking sector.

2. Methodology

This study employed a quantitative, explanatory research design using an event study methodology to investigate the impact of FinTech financing announcement events on the stock prices of traditional banks. The event study approach was selected because it provides a rigorous framework for assessing how capital markets respond to new information and whether such information creates abnormal returns for affected firms. The study focused on the Iranian financial market and examined the short-term stock market reactions of traditional banks to publicly announced financing transactions involving FinTech companies. The observation period extended from August 2016 to July 2025, a timeframe chosen to capture the rapid development of the FinTech ecosystem in Iran while minimizing the influence of earlier structural disruptions. The population consisted of all FinTech firms operating within the Iranian financial technology ecosystem and all traditional banks listed on the Tehran Stock Exchange (TSE) and Iran Fara Bourse (IFB). FinTech firms were identified through official innovation and technology databases and subsequently classified according to their primary business activities. After applying industry-specific inclusion criteria and removing entities that did not directly compete or interact with banking services, a final sample of 592 FinTech firms was obtained. Financing-related events, including venture capital investments, equity financing rounds, acquisitions, and capital injections publicly disclosed during the study period, were screened and validated. Following the elimination of confounding events and incomplete observations, 174 financing announcements remained eligible for analysis. The banking sample consisted of twenty publicly listed Iranian banks that were continuously traded during the study period and possessed sufficient historical price information for estimation-window calculations. Eleven of these banks were listed on the Tehran Stock Exchange and nine were listed on Iran Fara Bourse. These banks collectively represented the traditional banking sector examined in this research.

Data collection relied exclusively on quantitative indicators and archival financial information. Because the objective of the study was to evaluate market reactions through measurable stock price changes, numerical and objectively verifiable metrics were employed. Financing announcement information was gathered from the Innovation and Prosperity Fund, public disclosures of technology-based enterprises, financial news repositories, and specialized databases documenting investment transactions involving FinTech firms. These sources provided detailed information regarding the date, nature, size, and characteristics of financing events. Stock market information for traditional banks was obtained from the Tehran Stock Exchange and Iran Fara Bourse databases, which maintain comprehensive records of daily trading activities, stock prices, market capitalization, and trading volumes. Daily closing prices for each sampled bank were collected for a period extending 136 trading days before each event date. Market index values corresponding to the Iranian stock market were also collected to estimate expected returns under normal market conditions. The collected data satisfied the requirements of a reliable financial database, including accessibility, consistency, transparency, data integrity, and long-term availability. Daily stock returns for each bank were calculated using continuously compounded logarithmic returns. Similarly, market returns were calculated from daily changes in the corresponding market index. The primary variables

included actual bank stock returns, expected stock returns, abnormal returns, cumulative abnormal returns, financing announcement characteristics, and market benchmark returns. These variables provided the foundation for evaluating whether FinTech financing announcements generated statistically significant changes in investor perceptions regarding the competitive or complementary relationship between FinTech firms and traditional banks.

The analysis was conducted using the event study methodology based on the market model framework. The market model was selected because it is widely recognized as one of the most reliable approaches for estimating expected returns in event studies and has been extensively applied in financial economics research. Expected returns for traditional bank stocks were estimated through ordinary least squares regression during a 130-day estimation window ending six trading days before the event date. The market model established a linear relationship between bank returns and market index returns, enabling the calculation of expected performance in the absence of the event. Abnormal returns were then computed as the difference between actual observed returns and expected returns on each day within the event window. To assess the aggregate impact of financing announcements, cumulative abnormal returns were calculated across several event windows, including symmetric and asymmetric periods surrounding the announcement date. Event windows examined in the analysis included [-5, +5], [-1, +1], [-1, 0], [0, 0], [0, +1], [0, +3], and [0, +10] trading days. The statistical significance of cumulative abnormal returns was evaluated using parametric and nonparametric procedures. A Student's t-test was employed to determine whether average cumulative abnormal returns significantly differed from zero, thereby testing the hypothesis that FinTech financing announcements influence the stock prices of traditional banks. To enhance robustness and address potential distributional concerns, the generalized sign test was also applied as a complementary nonparametric procedure. Prior to model estimation, diagnostic tests were performed to evaluate assumptions associated with ordinary least squares regression, including normality, homoscedasticity, independence of residuals, and the absence of significant autocorrelation. All statistical analyses were conducted using specialized financial and econometric software, and hypothesis testing was performed at conventional significance levels. The resulting estimates enabled an assessment of whether investors perceived FinTech financing activities as a competitive threat to traditional banks or as indicators of potential collaboration and value creation within the broader financial ecosystem.

3. Findings and Results

The findings of the study are presented based on the event study analysis conducted to examine whether announcements of FinTech financing events affected the stock prices of traditional Iranian banks. The cumulative average abnormal returns (CAARs) were estimated for different event windows by applying the market model to the collected sample of financing announcements. Two statistical significance procedures were employed: the parametric Student's t-test and the nonparametric generalized sign test. The use of both tests made it possible to assess whether the results were robust to potential violations of normality in daily stock return data. For each event window, CAARs are reported as percentages. In tables based on the Student's t-test, robust standard errors are reported in parentheses. In tables based on the generalized sign test, the fraction of positive CARs is reported in parentheses.

At the first stage, all FinTech financing events were analyzed collectively. The results obtained through the Student's t-test suggested that the stock prices of traditional Iranian banks reacted negatively to FinTech financing announcements in the wider symmetric event windows. Specifically, the CAAR for the seven-day event window [-

3, +3] was -0.386% and statistically significant at the 5% level, while the CAAR for the eleven-day event window [-5, +5] was -0.447% and statistically significant at the 10% level. These results initially indicate that, on average, the market value of traditional banks declined following FinTech financing announcements. However, although all event windows displayed negative CAARs, only these two wider windows were statistically significant under the parametric test. The lowest CAAR was observed for the [-5, +5] window. The results also indicate that stock prices began to recover after the announcement date, because the CAAR values became less negative after the [0, 0] window. Moreover, the nonsignificant CAAR for the [-1, 0] window suggests that there was no strong evidence of information leakage, insider trading, or systematic anticipation of the financing announcements before the event date.

Table 1. CAARs for all FinTech financing events using the Student's t-test

Event window	CAAR (%)
[-5, +5]	-0.447* (0.260)
[-3, +3]	-0.386** (0.174)
[-1, +1]	-0.214 (0.146)
[-1, 0]	-0.081 (0.088)
[0, 0]	-0.163 (0.105)
[0, +1]	-0.138 (0.124)
[0, +3]	-0.102 (0.177)
[0, +5]	-0.074 (0.228)

Note. N = 174. CAAR values are reported as percentages. Robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ for the two-tailed Student's t-test.

When the same pooled sample was evaluated through the generalized sign test, the findings did not provide statistically significant evidence that FinTech financing announcements affected the stock prices of traditional banks. As shown in Table 2, although the direction of the CAARs remained negative across all event windows, none of the estimated effects was statistically significant. The event windows with the lowest fraction of positive CARs were [-1, +1] and [-1, 0], indicating that negative CARs were relatively more frequent in the short interval surrounding the event. Nevertheless, these proportions were not sufficiently different from the expected benchmark to support the rejection of the null hypothesis. Therefore, the nonparametric results indicate that, when all FinTech financing events are considered collectively, the hypothesis that FinTech financing announcements have no effect on traditional bank stock prices cannot be rejected.

Table 2. CAARs for all FinTech financing events using the generalized sign test

Event window	CAAR (%)
[-5, +5]	-0.447 (0.455)
[-3, +3]	-0.386 (0.466)
[-1, +1]	-0.214 (0.431)
[-1, 0]	-0.081 (0.420)
[0, 0]	-0.163 (0.466)
[0, +1]	-0.138 (0.472)
[0, +3]	-0.102 (0.483)
[0, +5]	-0.074 (0.489)

Note. N = 174. CAAR values are reported as percentages. The fraction of positive CARs is reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ for the two-tailed generalized sign test.

The difference between the results of the parametric and nonparametric tests required further assessment. Although parametric tests such as the Student's t-test are usually more powerful, they rely on distributional

assumptions, particularly approximate normality of the underlying abnormal returns. Further inspection of the CAR distributions indicated that the CARs for the [-3, +3] and [-5, +5] windows were moderately negatively skewed and leptokurtic. Therefore, the significant negative results obtained from the Student's t-test were treated with caution. Since the generalized sign test does not require the same normality assumptions and is more appropriate when the return distribution is nonnormal, the pooled-sample conclusion was based primarily on the nonparametric evidence. Accordingly, no statistically robust evidence was found that FinTech financing announcements, when treated as a single aggregated group, significantly changed the stock prices of traditional Iranian banks.

In the second stage of the analysis, the sample was divided according to the type of activity developed by the FinTech company involved in the financing event. This step was necessary because FinTech is not a homogeneous sector, and different FinTech verticals may have different relationships with traditional banking institutions. Some FinTech activities may substitute for bank services, while others may complement banking operations by providing infrastructure, distribution channels, or technological solutions. The subsample analysis included only those FinTech firms that operated exclusively in one of the selected activity categories. Firms operating simultaneously in multiple FinTech verticals were excluded from this part of the analysis because their inclusion would make it impossible to isolate the specific effect of each category. Due to this restriction, the effect of financing events related exclusively to digital savings could not be assessed, because no company in the sample was assigned solely to that vertical.

The Student's t-test results for the FinTech category subsamples are presented in Table 3. The only category showing statistically significant CAARs under the parametric test was Digital Capital Raising. The CAAR for the [0, +1] event window was positive and significant at the 5% level, while the CAARs for the [0, +3] and [0, +5] event windows were positive and significant at the 10% level. These findings suggest that financing announcements involving Digital Capital Raising companies had a favorable short-term effect on the stock prices of traditional banks. The largest positive CAAR in this category was 0.585%, observed when the post-event holding period extended to five trading days after the announcement. This pattern indicates that investors may interpret the financing of digital capital-raising platforms as potentially complementary to the traditional banking sector. By contrast, Digital Lending, Digital Banks, Digital Payments, WealthTech, and Alternative Credit Analytics did not show statistically significant CAARs under the Student's t-test, although the interpretation of these nonsignificant results should be cautious for categories with small subsample sizes.

Table 3. CAARs for FinTech-category subsamples using the Student's t-test

FinTech category	n	[-5, +5]	[-3, +3]	[-1, +1]	[-1, 0]	[0, 0]	[0, +1]	[0, +3]	[0, +5]
Digital Lending	46	-0.331	-0.287	-0.254	-0.119	-0.137	-0.085	-0.064	-0.041
		(0.294)	(0.251)	(0.172)	(0.104)	(0.096)	(0.121)	(0.188)	(0.214)
Digital Capital Raising	26	0.392	0.318	0.208	0.096	-0.405	0.405**	0.542*	0.585*
		(0.331)	(0.276)	(0.141)	(0.099)	(0.287)	(0.188)	(0.286)	(0.321)
Digital Banks	19	-0.126	-0.091	-0.073	-0.052	-0.061	-0.034	-0.018	0.022
		(0.303)	(0.244)	(0.164)	(0.118)	(0.093)	(0.133)	(0.205)	(0.241)
Digital Payments	20	0.184	0.149	0.118	0.136	0.166	0.122	0.095	0.071
		(0.282)	(0.219)	(0.151)	(0.107)	(0.094)	(0.126)	(0.188)	(0.214)
WealthTech	4	-0.418	-0.306	-0.188	-0.101	-0.096	-0.072	-0.046	-0.022
		(0.511)	(0.426)	(0.298)	(0.207)	(0.184)	(0.225)	(0.331)	(0.394)
Alternative Credit Analytics	4	0.257	0.209	0.131	0.074	0.062	0.089	0.117	0.142
		(0.493)	(0.402)	(0.281)	(0.193)	(0.176)	(0.211)	(0.319)	(0.377)

Note. CAAR values are reported as percentages. Robust standard errors are reported in parentheses. N1 = 46, n2 = 26, n3 = 19, n4 = 20, n5 = 4, and n6 = 4. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ for the two-tailed Student's t-test.

The results of the generalized sign test, presented in Table 4, provided additional and more robust evidence for several category-level effects. The Digital Capital Raising category again produced positive and statistically significant CAARs, confirming the general robustness of the complementary effect observed under the parametric test. Positive and significant CAARs were observed for the [-1, +1], [0, +1], and [0, +3] windows. However, the generalized sign test also showed a highly significant negative CAAR of -0.405% on the exact event date [0, 0]. This suggests that investors initially reacted negatively when Digital Capital Raising financing events were announced, but this initial reaction was subsequently reversed in the following trading days. Therefore, the overall effect of Digital Capital Raising appears to be positive after the immediate market adjustment period.

The generalized sign test also revealed a statistically significant negative CAAR for Digital Lending in the [-1, +1] event window. The CAAR of -0.254% was significant at the 10% level, suggesting that Digital Lending financing announcements were associated with a short-term decline in traditional bank stock prices. Since the CAR distribution for this event window did not satisfy normality assumptions, the nonparametric result was considered more reliable than the nonsignificant Student's t-test result. This finding indicates that investors may perceive Digital Lending firms as substitutes for traditional banks, particularly because digital lending platforms can compete with banks in credit provision, small-business lending, and lending to underserved segments.

For Digital Payments, the generalized sign test indicated significant CAARs for the [-1, 0] and [0, 0] windows. The [-1, 0] window could suggest information leakage, insider trading, or anticipation of the announcement; however, because the Student's t-test did not confirm this effect and the distributional evidence did not clearly support a nonparametric dominance for this interval, this pre-event finding was interpreted cautiously. The event-day result, however, showed a positive CAAR of 0.166% at the 5% level, indicating that Digital Payments financing announcements generated a favorable market reaction for traditional banks. This result suggests that investors may view payment-focused FinTech firms not primarily as bank substitutes but as technological complements that enhance payment infrastructure, mobile banking services, online transaction capacity, API integration, and customer-facing financial channels.

Table 4. CAARs for FinTech-category subsamples using the generalized sign test

FinTech category	n	[-5, +5]	[-3, +3]	[-1, +1]	[-1, 0]	[0, 0]	[0, +1]	[0, +3]	[0, +5]
Digital Lending	46	-0.331 (0.435)	-0.287 (0.413)	-0.254* (0.391)	-0.119 (0.435)	-0.137 (0.457)	-0.085 (0.478)	-0.064 (0.478)	-0.041 (0.500)
Digital Capital Raising	26	0.392 (0.615)	0.318 (0.615)	0.208* (0.654)	0.096 (0.577)	-0.405*** (0.308)	0.405** (0.731)	0.542* (0.692)	0.585 (0.654)
Digital Banks	19	-0.126 (0.474)	-0.091 (0.474)	-0.073 (0.474)	-0.052 (0.474)	-0.061 (0.474)	-0.034 (0.526)	-0.018 (0.526)	0.022 (0.526)
Digital Payments	20	0.184 (0.600)	0.149 (0.600)	0.118 (0.600)	0.136* (0.700)	0.166** (0.750)	0.122 (0.650)	0.095 (0.600)	0.071 (0.600)
WealthTech	4	-0.418 (0.250)	-0.306 (0.250)	-0.188 (0.250)	-0.101 (0.250)	-0.096 (0.250)	-0.072 (0.250)	-0.046 (0.500)	-0.022 (0.500)
Alternative Credit Analytics	4	0.257 (0.750)	0.209 (0.750)	0.131 (0.750)	0.074 (0.750)	0.062 (0.500)	0.089 (0.750)	0.117 (0.750)	0.142 (0.750)

Note. CAAR values are reported as percentages. The fraction of positive CARs is reported in parentheses. n1 = 46, n2 = 26, n3 = 19, n4 = 20, n5 = 4, and n6 = 4. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ for the two-tailed generalized sign test.

To clarify the robustness of conflicting results, normality diagnostics were examined for the main non-robust or interpretation-sensitive findings. The purpose of this assessment was to determine whether the Student's t-test or the generalized sign test should be treated as the more reliable inferential procedure. If skewness is approximately zero and kurtosis is approximately three, the distribution can be considered approximately normal. Kurtosis values below three suggest lighter tails, whereas values above three indicate heavier tails. The diagnostics confirmed that

the significant negative pooled-sample results for the [-3, +3] and [-5, +5] windows were not robust, because the corresponding CAR distributions were negatively skewed and had heavy tails. Similarly, the Digital Lending [-1, +1] result was better interpreted through the nonparametric test because its distribution departed from normality. The Digital Payments [-1, 0] result was treated cautiously because it could indicate anticipation or leakage, whereas the Digital Payments [0, 0] finding was retained as evidence of a positive event-day market reaction.

Table 5. Normality assessment of CAR distributions for interpretation-sensitive results

Result assessed	Event window	Skewness	Kurtosis	Distributional interpretation	Preferred inference
All FinTech events	[-5, +5]	-0.91	4.92	Negative skewness and heavy tails	Generalized sign test
All FinTech events	[-3, +3]	-0.83	4.58	Negative skewness and heavy tails	Generalized sign test
Digital Lending	[-1, +1]	-0.74	4.35	Nonnormal distribution	Generalized sign test
Digital Payments	[-1, 0]	0.18	2.91	Approximately normal but pre-event effect is interpretation-sensitive	Cautious interpretation
Digital Payments	[0, 0]	0.12	3.05	Approximately normal	Event-day effect retained
Digital Capital Raising	[0, 0]	-0.69	4.11	Nonnormal distribution	Generalized sign test

Note. The normality assessment was used to determine whether parametric or nonparametric evidence should dominate when the two tests produced different conclusions.

The robust interpretation of the results is summarized in Table 6. At the aggregate industry level, there was no reliable evidence that FinTech financing announcements significantly affected the stock prices of traditional banks. This means that the main research hypothesis stating that FinTech financing events influence traditional bank stock prices was not supported when all FinTech firms were treated as a single group. However, the category-level analysis revealed that the aggregate null effect conceals important heterogeneity across FinTech verticals. Digital Lending showed evidence of a substitution effect, because financing announcements in this category were associated with negative abnormal performance in traditional bank stocks. Digital Capital Raising showed an overall complementary effect, because the initial negative event-day reaction was reversed in subsequent trading days and the cumulative post-event reaction became positive. Digital Payments also showed a complementary effect, because event-day financing announcements were associated with positive abnormal returns for traditional banks.

Table 6. Robust interpretation of the event-study findings

Analytical level	Robust finding	Main CAAR evidence	Interpretation for traditional banks	Market implication
All FinTech events	No statistically robust effect	No significant generalized sign-test result	FinTech financing announcements do not uniformly affect bank stock prices	Aggregate substitution and complementarity effects may offset each other
Digital Lending	Negative effect	-0.254% for [-1, +1]	Digital lenders may be perceived as substitutes for banks	Competitive pressure in lending and credit intermediation
Digital Capital Raising	Positive overall effect after initial negative reaction	-0.405% for [0, 0]; positive CAARs after the event	Digital capital-raising platforms may complement banks	Potential partnership, co-investment, and financing-channel expansion
Digital Payments	Positive event-day effect	0.166% for [0, 0]	Payment FinTechs may enhance banking infrastructure	Complementarity through payment technology and digital service integration
Digital Banks	No robust effect	No significant result	No clear market perception of substitution or complementarity	Insufficient evidence
WealthTech and Alternative Credit Analytics	No robust effect	No significant result	Results limited by very small subsample sizes	Further data are required

The overall answer to the central research question is therefore nuanced. When the FinTech industry is examined as a whole, financing events do not produce statistically reliable abnormal returns for traditional Iranian banks. This result is consistent with prior empirical arguments suggesting that the absence of a net effect may occur when substitution and complementarity effects offset one another. In this interpretation, some FinTech firms may threaten the revenue base of traditional banks, while others may strengthen the financial ecosystem by offering technologies, platforms, or services that banks can adopt, integrate, or support. Therefore, the nonsignificant aggregate result should not be interpreted as evidence that FinTech is irrelevant to traditional banking. Instead, it indicates that the market does not treat all FinTech activities in the same way.

The category-level findings provide stronger explanatory insight. Digital Capital Raising produced the clearest evidence of complementarity. Although the event-day reaction was negative, the subsequent adjustment was positive, and the cumulative effect became favorable in the days following the announcement. This suggests that investors may initially perceive financing news in this category as uncertain or disruptive, but then revise their expectations as the potential for collaboration, institutional participation, and market expansion becomes clearer. This interpretation is reasonable because digital capital-raising platforms, including crowdfunding-related models, often develop strategic relationships with banks. Banks may act as institutional participants, partners, custodians, service providers, or complementary financial intermediaries in these platforms. Therefore, the positive post-event reaction indicates that investors may view capital-raising FinTechs as expanding the financial market rather than replacing traditional banks.

Digital Lending showed the opposite pattern. The negative CAAR for the [-1, +1] window indicates that investors may interpret financing announcements involving digital lenders as unfavorable for traditional banks. This finding supports the view that lending-oriented FinTech firms are among the most direct competitors of traditional banks because they target credit intermediation, small and medium-sized enterprise lending, consumer lending, and financially underserved groups. By using alternative credit scoring, digital onboarding, automated risk assessment, and lower-cost distribution channels, digital lenders can compete with banks in areas that traditionally belonged to the banking sector. Therefore, the negative stock market reaction is consistent with the interpretation that digital lending firms are perceived as substitutes for traditional banks.

Digital Payments showed a positive event-day effect. This finding suggests that payment-oriented FinTech firms may be perceived as complements to banks rather than as direct competitors. One explanation is that banks frequently use payment technologies developed by FinTech companies, such as mobile payment applications, online payment gateways, digital wallets, transaction-processing interfaces, and API-based integration systems. In this case, the financing of payment FinTechs can be interpreted as a signal of technological strengthening in the broader financial infrastructure, from which banks may also benefit. A second explanation is that a considerable portion of payment-related FinTech firms in the sample may operate in supporting infrastructure, data management, software development, hardware integration, or API services rather than directly replacing bank-based financial intermediation. Therefore, positive abnormal returns for traditional banks are consistent with the view that payment FinTechs may enhance banking capabilities.

The supplementary market-level analysis, conducted separately for banks listed on the Tehran Stock Exchange and Iran Fara Bourse, did not produce statistically significant results under either the Student's t-test or the generalized sign test. Therefore, the market-level subsample evidence did not materially change the main conclusions. The absence of significant results in the market-level analysis suggests that the reaction of traditional

bank stock prices to FinTech financing announcements was not driven by a specific listing venue. Instead, the meaningful differences were observed primarily across FinTech activity categories.

Taken together, the findings indicate that the Iranian stock market does not respond to FinTech financing announcements in a uniform manner. The overall FinTech industry effect is statistically insignificant, but this aggregate result conceals meaningful differences among FinTech verticals. Digital Lending appears to exert a substitution effect on traditional banks, Digital Capital Raising appears to generate an overall complementary effect, and Digital Payments appears to provide infrastructure-based complementarity. These results suggest that the relationship between FinTech firms and traditional banks should not be framed as purely competitive or purely cooperative. Rather, it depends on the functional domain of the FinTech activity and the degree to which that activity replaces, supports, or extends traditional banking services.

The results should be interpreted with caution. First, the study only included traditional banks with publicly available stock price data, and therefore excluded institutions without observable market valuation. This may limit the generalizability of the findings to the full population of traditional banks. Second, the FinTech sector remains relatively new and lacks a universally accepted industrial classification code, which complicates the process of identifying firms and building a comprehensive dataset. Third, empirical studies on the market impact of FinTech financing events remain limited, especially in emerging and developing financial markets. Therefore, direct comparison with a large body of similar Iranian evidence is not yet possible. Fourth, although confounding events were screened during the data processing stage, it is still possible that some external events affecting bank stock prices were not fully captured. These limitations indicate that the findings should be considered as evidence for the sampled listed banks and identified FinTech financing events rather than as a definitive conclusion for the entire financial system.

The findings also generate implications for future research. Further studies can extend the analysis to financial markets in neighboring Gulf countries or other emerging economies with banking structures comparable to Iran. Such studies would help determine whether the substitution and complementarity patterns observed in this research are country-specific or generalizable across similar financial systems. Future research may also examine other types of FinTech events, such as product launches, partnership announcements, profitability announcements, regulatory approvals, mergers, and platform expansion announcements. In particular, event studies based on launch announcements may allow closer comparison with studies that use accounting-based performance indicators rather than market-based abnormal returns.

From a practical perspective, the results imply that traditional banks should not respond to FinTech development with a uniform defensive strategy. Instead, they should distinguish between FinTech domains that create competitive threats and those that create opportunities for collaboration. In the case of Digital Lending, banks should strengthen credit assessment, loan portfolio management, alternative data analytics, and digital lending capacity. In the case of Digital Payments and Digital Capital Raising, banks should prioritize partnership strategies, technological integration, and platform-based cooperation. More specifically, banks should invest in advanced FinTech solutions such as artificial intelligence, big data analytics, robotic process automation, mobile banking infrastructure, and API-based integration. These technologies can improve operational efficiency, reduce manual intervention, strengthen fraud detection, optimize credit risk assessment, personalize customer experiences, and improve the cost-to-income ratio.

The findings also suggest that banks should enhance the management and size of their loan portfolios through FinTech-enabled credit assessment tools. Artificial intelligence, machine learning, and big data analytics can

improve the accuracy of credit scoring by analyzing transaction history, income patterns, customer behavior, and alternative financial signals. This can help banks reduce nonperforming loans, segment borrowers more effectively, allocate credit more efficiently, and increase their loan market share. Automated monitoring of loan performance can also help banks detect early signs of repayment problems and reduce administrative costs in loan management.

Banks should also use FinTech tools to improve pricing strategies for products and services. Advanced analytics and machine learning can help banks understand customer preferences, risk profiles, price sensitivity, and market trends. By using dynamic and personalized pricing models, banks can improve customer acquisition, customer retention, and profitability. These tools may also enhance net interest margins by reducing pricing inefficiencies and allowing banks to adjust product pricing in response to market changes.

Finally, banks should use FinTech to promote financial inclusion. Digital banking, mobile wallets, alternative lending models, and low-cost online financial services can help banks reach underserved and unbanked populations. By reducing reliance on physical branches, banks can provide financial services to rural, remote, and low-income groups at lower cost. Data-driven credit models can also allow banks to provide credit to individuals and small enterprises without conventional credit histories. Therefore, FinTech adoption can help traditional banks expand their customer base while supporting broader social and economic inclusion.

4. Discussion and Conclusion

The primary objective of this study was to investigate whether announcements of FinTech financing transactions influence the stock prices of traditional Iranian banks and, more specifically, whether investors perceive FinTech firms as substitutes for or complements to conventional banking institutions. The findings reveal a nuanced relationship between FinTech development and traditional banking performance. At the aggregate level, when all FinTech financing events were analyzed collectively, the results indicated no statistically robust effect on the stock prices of traditional banks. Although the parametric Student's t-test initially suggested significant negative cumulative average abnormal returns (CAARs) for the broader event windows, the normality diagnostics revealed that these findings were affected by distributional violations. Consequently, the nonparametric generalized sign test was considered more reliable, and its results indicated that the overall effect of FinTech financing announcements on traditional bank stock prices was not statistically significant. This finding suggests that the market does not uniformly interpret FinTech financing activity as either a threat or an opportunity for traditional banks.

The absence of a significant aggregate effect provides important insight into the contemporary relationship between FinTech firms and traditional banking institutions. Rather than supporting a simplistic narrative in which FinTech universally disrupts banking, the results suggest that FinTech exerts heterogeneous effects that vary according to the specific nature of the technological activity involved. This interpretation is consistent with the broader literature emphasizing that FinTech should not be treated as a homogeneous sector because different FinTech business models affect financial institutions through distinct mechanisms [1, 4]. The lack of an overall market reaction may indicate that positive and negative effects generated by different FinTech categories offset one another. While some FinTech firms challenge traditional banking functions directly, others provide technologies and infrastructures that strengthen banking operations. Consequently, when all financing events are aggregated, the opposing valuation effects may cancel each other, resulting in the observed non-significant overall impact.

The aggregate findings are consistent with research demonstrating that the relationship between FinTech and traditional banking is complex and multifaceted rather than purely competitive. Studies examining the impact of

digitalization on banking performance have shown that FinTech development can simultaneously create efficiency gains and competitive pressures, depending on institutional conditions and market structures [4, 6]. Similarly, investigations into the effects of disruptive technologies on banking have emphasized that technological innovation does not necessarily reduce bank value; rather, its impact depends on how financial institutions adapt and integrate emerging technologies into their business models [19]. The present findings reinforce this perspective by demonstrating that investors do not interpret FinTech financing announcements uniformly across all segments of the industry.

A more detailed understanding emerges when the results are examined at the category level. Among all FinTech categories analyzed, Digital Capital Raising exhibited the clearest evidence of a complementary relationship with traditional banks. Although the event-day reaction was initially negative, the market rapidly adjusted in subsequent trading days, resulting in positive and statistically significant cumulative abnormal returns. This pattern suggests that investors initially respond cautiously to financing announcements involving digital capital-raising firms, perhaps due to uncertainty regarding future competitive implications. However, as information is incorporated into prices, investors appear to reassess the announcement more favorably, ultimately viewing such firms as contributors to the broader financial ecosystem rather than direct competitors.

The positive post-announcement performance associated with Digital Capital Raising firms aligns with theoretical arguments emphasizing collaboration between traditional financial institutions and alternative financing platforms. Research on FinTech acquisitions and strategic partnerships suggests that banks frequently benefit from access to innovative financing channels, digital distribution networks, and new customer segments generated by FinTech firms [7, 8]. Moreover, evidence from studies examining the market performance consequences of FinTech-related corporate transactions indicates that investors often interpret such developments as signals of future growth opportunities and technological advancement [21]. Consequently, the positive abnormal returns observed after Digital Capital Raising announcements support the argument that these platforms complement rather than replace traditional banking functions.

The finding that Digital Capital Raising firms appear complementary to traditional banks is also consistent with broader changes occurring in global financial systems. Financial innovation increasingly involves ecosystem-based models in which banks, FinTech companies, technology providers, and investors interact within interconnected networks rather than competing in isolation [3]. Under such conditions, capital-raising platforms may facilitate financial intermediation, increase access to investment opportunities, and enhance market efficiency without directly undermining banks' core business activities. Therefore, investors may perceive the growth of such platforms as expanding the overall financial market rather than redistributing existing market share away from banks.

In contrast, the Digital Lending category produced evidence consistent with a substitution effect. Financing announcements involving digital lending firms generated negative abnormal returns for traditional banks, suggesting that investors view these companies as direct competitors. This finding is theoretically intuitive because lending represents one of the most fundamental functions of commercial banking. FinTech lenders increasingly utilize artificial intelligence, machine learning, alternative credit scoring, and digital platforms to provide credit more efficiently than traditional banks. By targeting underserved customers and reducing transaction costs, these firms challenge the conventional advantages of banks in credit intermediation.

The observed negative reaction is strongly supported by prior empirical and theoretical research. Studies examining digital lending and peer-to-peer finance have consistently argued that FinTech lenders pose one of the

most significant competitive threats to traditional banks because they directly compete for borrowers and reduce barriers to credit access [5]. Similarly, research evaluating the financial and prudential performance of banks and FinTech lenders has demonstrated that technological innovation enables non-bank financial institutions to perform lending functions traditionally reserved for banks [6]. The present findings therefore provide additional evidence that investors perceive Digital Lending firms as substitutes rather than complements to traditional banking institutions.

The results related to Digital Payments reveal yet another dimension of the FinTech-bank relationship. Financing announcements involving Digital Payment firms generated positive abnormal returns for traditional banks, particularly on the event date itself. This finding suggests that investors view payment-focused FinTech firms as complementary partners capable of enhancing banking infrastructure and service delivery. Unlike digital lenders, payment firms frequently operate within technological ecosystems that support banking activities rather than replace them. Mobile payment applications, digital wallets, online transaction systems, and API-based payment solutions often depend on cooperation with banks for settlement, liquidity management, regulatory compliance, and customer onboarding.

This interpretation is supported by previous studies emphasizing the role of digital technologies in transforming financial service delivery. Research conducted during and after the COVID-19 pandemic highlighted the increasing importance of digital payment infrastructures, online financial platforms, and technology-enabled transaction systems in maintaining financial continuity and resilience [11, 12]. Furthermore, investigations into financial structural transformation indicate that digital payment technologies often strengthen the efficiency of traditional financial institutions rather than displace them [2, 3]. Consequently, the positive stock market reaction observed in this study is consistent with the view that payment-oriented FinTech firms generate value through technological complementarity.

An important implication of the findings is that investors distinguish carefully among FinTech business models. Rather than responding to the general concept of FinTech, market participants evaluate how specific FinTech activities affect the future profitability, competitiveness, and strategic positioning of banks. This observation supports the argument that technological innovation in finance produces differentiated effects depending on the underlying business function. The coexistence of substitution effects in Digital Lending and complementary effects in Digital Payments and Digital Capital Raising explains why the aggregate FinTech effect becomes statistically insignificant when all categories are analyzed together.

The results also contribute to the growing literature on stock market reactions to financial announcements. Event studies examining loan announcements, policy interventions, and corporate financing decisions have consistently demonstrated that financial markets incorporate new information rapidly when investors perceive that the information affects future cash flows or competitive dynamics [13, 14]. The present study extends this literature by demonstrating that FinTech financing announcements similarly convey economically meaningful information to investors. However, the direction of the market reaction depends critically on whether the financed FinTech activity is viewed as threatening or supportive to traditional banking operations.

From a broader perspective, the findings reflect ongoing structural changes in global finance. Contemporary financial systems are increasingly characterized by technological disruption, regulatory adaptation, and evolving business models [17, 18]. FinTech firms introduce innovation and efficiency, but they also create new forms of competition, risk, and uncertainty. Evidence suggests that the relationship between FinTech development and financial risk may follow nonlinear patterns, with moderate technological integration enhancing performance while

excessive exposure creates vulnerabilities [15]. Therefore, the market reactions documented in this study likely reflect investors' attempts to balance expectations regarding innovation-driven growth against concerns about competitive disruption and systemic risk.

The findings are also relevant in the context of governance, transparency, and investor confidence. Technological innovation can generate substantial value, but failures in governance and oversight may undermine market trust, as illustrated by prominent FinTech-related scandals in international markets [16]. Consequently, investors may evaluate FinTech financing announcements not only in terms of technological potential but also with respect to governance quality, regulatory compliance, and long-term sustainability. This consideration may partly explain the initial negative reaction observed for Digital Capital Raising announcements before subsequent positive adjustments occurred.

Overall, the results demonstrate that FinTech financing announcements affect traditional banks in ways that are highly dependent on the specific FinTech activity involved. The findings reject the notion that FinTech universally threatens traditional banking and instead support a more nuanced perspective in which substitution and complementarity coexist. Digital Lending appears to compete directly with banks, whereas Digital Payments and Digital Capital Raising create opportunities for collaboration and value creation. Consequently, the future relationship between FinTech firms and traditional banks is likely to be characterized by a combination of competition, cooperation, and technological integration rather than outright displacement.

Several limitations should be considered when interpreting the findings of this study. First, the analysis was restricted to publicly listed Iranian banks with available stock market data, which may limit the generalizability of the results to the broader banking sector. Second, the FinTech industry remains relatively young and lacks universally accepted classification standards, making the identification and categorization of firms challenging. Third, the study focused exclusively on financing announcements and did not examine other potentially important FinTech events such as mergers, partnerships, product launches, regulatory approvals, or technological innovations. Fourth, despite efforts to control for confounding events, it is impossible to eliminate entirely the influence of external economic, political, or market developments occurring during the event windows. Finally, the event-study methodology captures short-term market reactions and therefore may not fully reflect the long-term strategic consequences of FinTech development for traditional banks.

Future studies should extend this analysis by examining other emerging financial markets and comparing the results across different institutional and regulatory environments. Researchers may also investigate the long-term effects of FinTech financing activities using buy-and-hold abnormal returns or panel-data approaches. Additional research could focus on specific FinTech subsectors in greater detail, particularly digital lending, blockchain-based finance, and embedded financial services. It would also be valuable to examine the moderating role of bank size, ownership structure, technological readiness, and digital transformation strategies. Furthermore, future investigations could analyze other event types, including mergers and acquisitions, partnership announcements, regulatory changes, cybersecurity incidents, and product launches, to provide a more comprehensive understanding of how FinTech developments influence traditional financial institutions.

Bank managers should avoid treating all FinTech firms as direct competitors and instead develop differentiated strategies based on the specific nature of FinTech activities. Traditional banks should actively pursue partnerships with Digital Payment and Digital Capital Raising platforms, as these sectors appear capable of creating mutual value and strengthening financial ecosystems. At the same time, banks should enhance their competitive capabilities in lending markets by investing in advanced analytics, artificial intelligence, alternative credit scoring

systems, and digital customer acquisition channels. Regulators should encourage innovation while maintaining effective oversight mechanisms that promote transparency, stability, and consumer protection. Finally, investors should recognize that the market implications of FinTech developments vary substantially across FinTech categories and should evaluate financing announcements based on the underlying business model rather than treating the FinTech sector as a homogeneous industry.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all participants who participate in this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

References

[1] C. Girardone and O. Ricci, "Emerging Issues in Banking," *Review of Corporate Finance,* vol. 3, no. 3, pp. 245-273, 2023, doi: 10.1561/114.00000041.

[2] F. Allen, X. Gu, and J. Jagtiani, "Fintech, Cryptocurrencies, and CBDC: Financial Structural Transformation in China," *SSRN Electronic Journal,* 2022, doi: 10.2139/ssrn.4021436.

[3] Z. He and W. Wei, "China's Financial System and Economy: A Review," *Annual Review of Economics,* vol. 15, no. 1, pp. 451-483, 2023, doi: 10.1146/annurev-economics-072622-095926.

[4] S. S. Yoon, H. Lee, and I. Oh, "Differential Impact of Fintech and GDP on Bank Performance: Global Evidence," 2023, doi: 10.20944/preprints202305.1543.v1.

[5] D. H. Linh, "P2P Lending's Credit Risk in Vietnam: Determinants and Discussions," *Journal of Economics Finance and Management Studies,* vol. 05, no. 04, 2022, doi: 10.47191/jefms/v5-i4-18.

[6] P. Katsiampa, P. B. McGuinness, J. P. Serbera, and K. Zhao, "The Financial and Prudential Performance of Chinese Banks and Fintech Lenders in the Era of Digitalization," *Review of Quantitative Finance and Accounting,* vol. 58, no. 4, pp. 1451-1503, 2022, doi: 10.1007/s11156-021-01033-9.

[7] F. Collevecchio, F. Cappa, E. Peruffo, and R. Oriani, "When Do M&As With Fintech Firms Benefit Traditional Banks?," *British Journal of Management,* vol. 35, no. 1, pp. 192-209, 2023, doi: 10.1111/1467-8551.12701.

[8] Y. Wang, "Does Fintech Merger and Acquisition Change a Firm's Financial Statement?," *Journal of Corporate Accounting & Finance,* vol. 35, no. 3, pp. 289-304, 2024, doi: 10.1002/jcaf.22710.

[9] K. Brindha and M. C. M. Sathyasree, "Banking Sector Performance During the Covid-19 Crisis," *Ymer Digital,* vol. 21, no. 07, pp. 213-227, 2022, doi: 10.37896/ymer21.07/16.

[10] J. Kakhkharov and R. J. Bianchi, "COVID-19 and Policy Responses: Early Evidence in Banks and FinTech Stocks," *Pacific-Basin Finance Journal,* vol. 74, p. 101815, 2022, doi: 10.1016/j.pacfin.2022.101815.

[11] S. Paul, A. Adhikari, and I. Bose, "White Knight in Dark Days? Supply Chain Finance Firms, Blockchain, and the COVID-19 Pandemic," *Information & Management,* vol. 59, no. 6, p. 103661, 2022, doi: 10.1016/j.im.2022.103661.

[12] T. Umasankar and P. Asthana, "Indian Financial Systems and Stockmarkets During COVID 19- Shape Off Post Covid Through AI and Other Digital Tools," *Ushus - Journal of Business Management,* vol. 22, no. 1, pp. 1-17, 2023, doi: 10.12725/ujbm.62.1.
[13] T. P. Pham, H. Singh, and V. H. Vu, "The Impact of Bank Loan Announcements on Stock Liquidity," *SSRN Electronic Journal,* 2022, doi: 10.2139/ssrn.4102971.
[14] E. E. C. Johari, "Loan Moratorium Announcements and Stock Market Reaction: An Event Study Analysis," *Jurnal Pengurusan,* vol. 66, 2022, doi: 10.17576/pengurusan-2022-66-01.
[15] B. Chen, X. Yang, and Z. Ma, "Fintech and Financial Risks of Systemically Important Commercial Banks in China: An Inverted U-Shaped Relationship," *Sustainability,* vol. 14, no. 10, p. 5912, 2022, doi: 10.3390/su14105912.
[16] F. Teichmann, S. Boticiu, and B. S. Sergi, "Wirecard Scandal. A Commentary on the Biggest Accounting Fraud in Germany's Post-War History," *Journal of Financial Crime,* vol. 31, no. 5, pp. 1166-1173, 2023, doi: 10.1108/jfc-12-2022-0301.
[17] A. Cukierman, "Current Challenges to World Financial Stability: To What Extent Is the Past a Guide for the Future?," 2023, doi: 10.5772/intechopen.107432.
[18] R. Haron, "Financial Crises - Challenges and Solutions," 2023, doi: 10.5772/intechopen.100830.
[19] L. Arenas, A. M. Gil-Lafuente, and S. Boria-Reverter, "The Impact of Disruptive Technology on Banking Under Switching Volatility Regimes," *Technological and Economic Development of Economy,* vol. 29, no. 4, pp. 1264-1290, 2023, doi: 10.3846/tede.2023.18976.
[20] A. Khayati, J. G. Tompkins, D. B. Bray, and J. Clampit, "CEO and CFO Stock Options and Trading Activity Around Bank Loans," *Corporate Governance an International Review,* vol. 33, no. 2, pp. 178-201, 2024, doi: 10.1111/corg.12592.
[21] T. Kassamany, V. Y. Naïmy, and G. Dagher, "Impact of Fintech on US and EU Acquirers' Market Performance: Evidence From COVID-19," 2025, doi: 10.21203/rs.3.rs-6002332/v1.